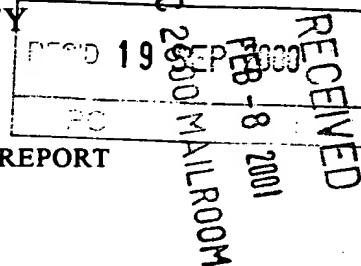


PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference ABME-0540	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US99/00498	International filing date (day/month/year) 08 JANUARY 1999	Priority date (day/month/year) 09 JANUARY 1998
International Patent Classification (IPC) or national classification and IPC IPC(7): G06F 13/00 and US Cl.: 340/990		
Applicant ABB POWER T&D COMPANY INC.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3 sheets.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 0 sheets.

3. This report contains indications relating to the following items:

I ☒ Basis of the report

II ☐ Priority

III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability

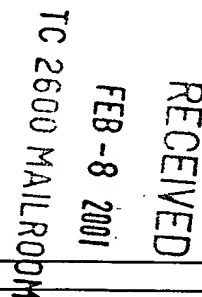
IV ☐ Lack of unity of invention

V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

VI ☐ Certain documents cited

VII ☐ Certain defects in the international application

VIII ☐ Certain observations on the international application



Date of submission of the demand 04 AUGUST 1999	Date of completion of this report 25 AUGUST 2000
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	Authorized officer ROBERT B. HARRELL <i>Rugenia Zogor</i>
Facsimile No. (703) 305-3230	Telephone No. (703) 305-9692

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US99/00498

I. Basis of the report**1. With regard to the elements of the international application:***☒ the international application as originally filed☒ the description:

pages 1-24, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of

☒ the claims:

pages 25-32, as originally filed
pages NONE, as amended (together with any statement) under Article 19
pages NONE, filed with the demand
pages NONE, filed with the letter of

☒ the drawings:

pages 1-12, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of

☒ the sequence listing part of the description:

pages NONE, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

☒ the description, pages NONE
☒ the claims, Nos. NONE
☒ the drawings, sheets/fig. NONE

5. ☐ This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

**Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US99/00498

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. statement**

Novelty (N)	Claims	<u>1-40</u>	YES
	Claims	<u>NONE</u>	NO
Inventive Step (IS)	Claims	<u>1-40</u>	YES
	Claims	<u>NONE</u>	NO
Industrial Applicability (IA)	Claims	<u>1-40</u>	YES
	Claims	<u>NONE</u>	NO

2. citations and explanations (Rule 70.7)

Upon further consideration of the art of record it has been determined that claims 1-40 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest a crew locator system where field crew location information is sent to the enterprise computing system from a mobile field unit and upon a request to the enterprise computing system transmitting the field crew position data as currently claimed.

----- NEW CITATIONS -----
NONE



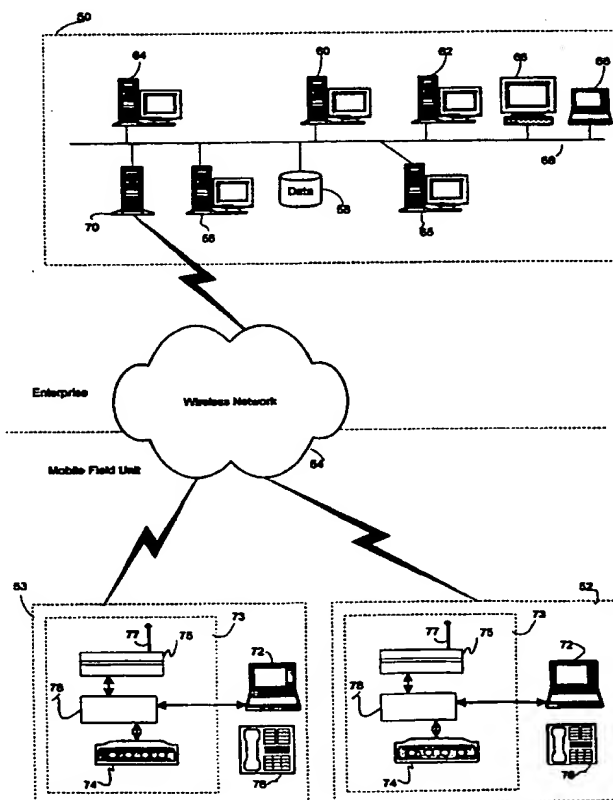
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : G06F 13/00		A1	(11) International Publication Number: WO 99/35585
			(43) International Publication Date: 15 July 1999 (15.07.99)
(21) International Application Number: PCT/US99/00498 (22) International Filing Date: 8 January 1999 (08.01.99) (30) Priority Data: 60/070,853 9 January 1998 (09.01.98) US (71) Applicant (for all designated States except US): ABB POWER T & D COMPANY INC. [US/US]; 1021 Main Campus Drive, Raleigh, NC 27606 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): KHALESSI, Amir [US/US]; 203 Brittany Place, Cary, NC 27511 (US). ARDALAN, Sasan [US/US]; Suite 106, 659 Cary Towne Boulevard, Cary, NC 27511 (US). (74) Agents: NORRIS, Norman, L. et al.; Woodcock Washburn Kurtz Mackiewicz & Norris LLP, 46th floor, One Liberty Place, Philadelphia, PA 19103 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.	

(54) Title: AUTOMATIC MOBILE CREW TRACKING SYSTEM WITH REMOTE ACCESS

(57) Abstract

A system for crew location and task assignment comprises an enterprise computing system (50), a mobile field unit (52), and wireless communication network (54) which supports transmission control protocol (TCP/IP). The enterprise computing network (50) comprises application programs (80) through which data related to the position of a mobile field unit (52) may be requested, various server machines (84) for storing position data, a local area network (LAN) connecting the server machines (84), and a gateway to the TCP/IP wireless network. A mobile field unit (52) comprises a receiver (97) for receiving position data from a positioning service, a processor (98) having instructions thereon for processing the position data, and a radio modem (86) for communicating the position data over the wireless network (54). The mobile field unit (52) and each machine in the enterprise computing system has a unique IP address assigned to it. Accordingly, commands and data can be communicated freely between all machines.



28. The crew locator system of claim 1, wherein said enterprise computing system further comprises an HTTP server for receiving HTTP requests and a plurality of common gateway interface scripts for interfacing with the stored position
5 data.

29. The crew locator system of claim 28, wherein said HTTP server is in operable communication with said wireless radio modem and thereby can accept a position data request from said second mobile field unit, process said position
10 data requests, and return position data.

29. The crew locator system of claim 28, wherein said HTTP server upon receiving position data request causes a first of said plurality of common gateway interface scripts to access said database, generate a HTTP field unit list
15 page, and transmit said HTTP field unit list page to said HTTP server for transmitting to said second mobile unit, said HTTP field unit list page causing a list of field units to be displayed when loaded in a web browser.

30. The crew locator system of claim 28, wherein said
20 HTTP server upon receiving position data request causes a second of said plurality of common gateway interface scripts to retrieve position data from said database relevant to one of said field units defined in said HTTP field unit list page and return said position data to said HTTP server for
25 transmitting to said second field unit.

31. The crew locator system of claim 30, wherein said position data comprises a first file and a second file.

32. The crew locator system of claim 31, wherein said first file is an HTML file.

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33. The crew locator system of claim 31, wherein said second file is a MIME type file.

34. The crew locator system of claim 33, wherein said second file comprises values corresponding to location,
5 velocity, and direction.

35. The crew locator system of claim 1, further comprising:

a third mobile field unit in communication with said wireless network, said third mobile field unit operable to
10 request the field position data from said first mobile field unit, received the field position data, and display the field position data, wherein said first mobile field unit is operable to transmit the field crew position data to said third mobile field unit.

15 36. The crew locator system of claim 1, wherein said first mobile field unit is operable to simultaneously transmit the field crew position data to said third mobile field unit and said enterprise computing system.

20 37. A method for distributing field crew position data in a system having a plurality of mobile field units, an enterprise system, and a TCP/IP wireless network, comprising the following steps:

(a) at a first mobile field unit, gathering and
25 processing position data;

(b) at the first mobile field unit, receiving and processing a request to forward the position data to the enterprise system;

(c) at the first mobile field unit, transmitting the
30 position data to the enterprise system;

(d) at the enterprise system, processing and storing the position data;

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(e) at the enterprise system, in response to a request for positioning data from a second mobile field unit, retrieving the position data;

(f) at the enterprise system, formatting the position
5 data;

(g) at the enterprise system, transmitting the position data to the second mobile field unit; and

(h) at the second mobile field unit, displaying the position data.

10

38. A method for receiving and storing position data in a system having a plurality of mobile field units, an enterprise system, and a TCP/IP wireless network, comprising the following steps:

15 (a) at the enterprise system, receiving position data;

(b) parsing the position data;

(c) retrieving latitude and longitude coordinates from the position data;

(d) retrieving velocity and direction statistics from
20 the position data;

(e) converting the latitude and longitude coordinates to plane coordinates; and

(f) storing the plane coordinates, velocity, and direction.

25 39. A method for formatting position data in a system having a plurality of mobile field units, an enterprise system, and a TCP/IP wireless network, comprising the following steps:

(a) at the enterprise system, retrieving the position
30 data;

(b) generating a first file comprising the position data;

(c) generating a second file, said second file being loadable by a web browser and having a reference to said

first file wherein upon loading said second file in a web browser, the web browser loads displays the position data stored in said first file.

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EE	Estonia						

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/00498

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : G06F 13/00

US CL : 340/990

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 340/988,989,990,991,992,993,994; 364/400; 370/242,399,395,397,471; 709/200,220,224

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS search terms, (crew# or vehicle#)(1a)(track? or locat?) and network#

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,636,122 A (SHAH et al.) 03 JUNE 1997, Abstract figures 5-14, col. 3 (line 1) to col. 4 (line 20-et seq.).	1-39



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
E earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*Z* document member of the same patent family
O document referring to an oral disclosure, use, exhibition or other means	
P document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

19 APRIL 1999

Date of mailing of the international search report

07 MAY 1999

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